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ABSTRACT

This paper studied the construct validity of the Receptivity to Change Inventory (RCI) as a measure of teacher receptivity to change. The sample consisted of all teachers in 94 schools in 6 districts in southern Louisiana. Usable data were received from 1,921 teachers from elementary schools and secondary schools during the spring of 1992. The RCI, as adapted for teachers, consists of 50 statements reflecting suggested planned changes in elementary schools. Selected RCI items were content updated to reflect more contemporary, possible changes in schools and all school levels, and additional items were added and piloted. Teachers rated items on a five-point scale. The conceptual framework of the RCI was examined through a factor analysis, which failed to confirm the RCI as a unidimensional measure. Teacher receptivity to change may be better conceptualized as a two-dimensional construct. The content of items loading on each factor reflected distinct categories of change initiatives termed superficial/behavioral change and cultural/normative change. The two-dimensional conception of receptivity to change is compatible with the idea that teachers will tolerate some types of change, but will strongly resist changes that are perceived to alter or threaten established normative patterns and beliefs. The complexity of teacher receptivity may have important implications for change processes. Two tables summarize study findings. (Contains 32 references.) (SLD)

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Teacher Receptivity to Change:

An Empirical Examination of Construct Validity Using the Results of Large-Scale Factor Analyses

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Teacher Receptivity to Change:
An Empirical Examination of Construct Validity
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Introduction

Contemporary approaches to organizational theory have recognized the complex and interactive nature of schools and depict schools as complex social systems concerned with both institutional and individual dimensions of organizational functioning (Lipham, 1988). In addition, the recent education literature characterizes American public education by frequent and recurring calls for educational reform (Murphy, 1988; Cuban, 1990). Thus, while schools are recognized as complex social systems, they are frequently faced with reform initiatives intended to change key elements of their structures and/or functions. Within this context, teachers have often been characterized as resistant to change and rigid in their conceptions of organizational roles (Giacquinta, 1973; Hopkins, 1990).

A considerable body of recent literature (Corbett, Firestone & Rossman, 1987; Darling-Hammond, 1990) has documented the importance of understanding teachers' response to change and has depicted teachers' initial responses to change efforts as influenced by organizational role and status about "who we are" and "how we do things around here." Darling-Hammond (1990) suggests that teachers may be the true gatekeepers of school change and innovation, not policy-makers, school principals, or superintendents. She also suggests that investigations of variables related to individual beliefs and attitudes, particularly those of teachers, has not been an integral part of past studies of change efforts and may account for the increasing diversity and alteration of practices inconsistent with intended planned change initiatives.

Teacher responses to change have been of interest to educational researchers and practitioners for decades. Yet, little is really understood regarding this aspect of planned organizational change in schools. The Receptivity to Change Inventory (Crisafulli, 1982; Hennigar, 1979) provides a useful tool for studying teachers' responses to a variety of change initiatives in school settings. Past studies of teacher receptivity to change using the RCI, as well as a number of other studies that have used different operational definitions of teacher receptivity to change (e.g., Raymond, 1979; Hannah, 1990), have conceptualized teacher receptivity to change as a unidimensional construct. However, Stern and Keislar (1977) conceptualized teacher receptivity to change as two-dimensional in terms of instructional and organizational innovations.

This paper presents the results of a study designed to explore the construct validity of the RCI (Crisafulli, 1982; Hennigar, 1979) as a measure of teacher receptivity to change. The results of the study are discussed in view of understanding the future role of teachers as gatekeepers and change agents in schools and within the context of schools as complex social systems. Discussion is also focused upon the implication of the findings for conceptualizing and defining what the construct of teacher receptivity to change means as applied to achieving planned organizational change in schools within the current context of large-scale educational reforms.

Methodology

Sample and Data Collection

The sample in this study consisted of all teachers in 94 schools within six districts in the southern region of Louisiana. The school sample closely reflected the statewide

distribution of all schools by level (elementary, 57%; middle, 15%; high, 17%) and by socioeconomic status. Schools included in the sample were from urban/city, suburban, and rural/sparsely populated settings. The student population for individual schools in the sample ranged from 48 to 1293, and faculty size ranged from 10 to 85. Socio-economic status (SES), as reflected by the total percentage of students eligible for free or reduced cost lunches in each school, ranged from 0% to 98%, with the higher percentage representing lower SES levels. Useable data were received from 1921 teachers during the spring of 1992 as part of an instrument packet distributed to teachers in 94 schools (52 elementary, 18 middle, 24 secondary). At least 40% of the teachers in each of 81 schools (86.17%) responded to the complete RCI.

Instrumentation

The Receptivity to Change Inventory (RCI), originally developed by Hennigar (1979) for use with middle management administrators in schools and adapted by Crisafulli (1982) for use with teachers, consists of 50 statements reflecting suggested planned changes in elementary schools. The 50 statements are responded to using a five-point scale ranging from 1="I would support the suggestion." to 5="No way I would support the suggestion."

For this study, selected RCI items were content updated to reflect more contemporary, possible changes in schools, and all schools levels (rather than on elementary schools), and additional items were added and piloted. The revised version of the RCI used for this study consisted of 56 items. For the purposes of scoring and statistical analyses, values assigned to each of the five alternative responses range from 1-5, with 1 assigned to the least positive response ("No way will I support the suggestion.") and 5 assigned to the most positive

response ("I would support the suggestion."). Values assigned in this way reflect reversed scoring values shown on the rating scale in the instrument. Alpha reliabilities for previous versions of the RCI have been reported by Hennigar (1979) with school principals as .91 and by Crisafulli (1982) with teachers as .92.

Teacher receptivity to change, as measured by the RCI, was operationalized in terms of teachers' self perceptions of their receptivity to various forms of planned organizational change. For the purposes of this study, slight modifications in the RCI were made. Changes in items include the following refinements:

1. Some of the items contained in the original instrument no longer represented innovation or planned change in current school contexts (e.g., instituting a breakfast program for students). These items were rewritten to reflect similar, but more up-to-date changes, or innovations.

2. Items in the original instrument reflected school contexts serving only elementary grades. Where necessary, items were modified to accommodate school contexts serving the full range of K-12 grade levels.

3. Some terms used in items were no longer accurate and current (e.g., Title I programs). In such instances terminology was changed to reflect current professional terminology (e.g., Chapter I programs).

4. Directions and labels for the response choices were modified to enhance clarity.

Pilot Study of Revised Receptivity to Change Inventory

A pilot study of the revised RCI (61 items) was completed with twelve highly experienced and knowledgeable teachers representing diverse school contexts (e.g.,

elementary, middle and secondary grade levels, and rural/sparsely populated and suburban geographic regions). Attention was also given to gender, ethnicity, subject and/or grade level specification of pilot participants, so that a broad range of individual characteristics and school context factors was represented. Teachers participating in the pilot were asked to provide feedback on the RCI at three (3) levels:

1) clarity of content, utility of questionnaire format and feasibility/believability of change items;

2) degree of significance of change; and

3) perceptions of typical teacher responses (i.e., low, mixed or high receptivity) for each questionnaire item.

Teachers were also asked to indicate any words or phrases in items or directions that were unclear or problematic. Based on the results of the pilot, the RCI was further refined to reflect a 56-item questionnaire.

Data Analyses

Descriptive Statistics

Summary statistics were completed for the RCI. Means, standard deviations, ranges and mean scores expressed as percentages of the maximum possible score were aggregated and reported for all teachers and by school level.

Factor Analyses

The RCI had previously undergone extensive factor analyses as part of instrument development activities, and in conjunction with its use in prior research studies. However, a review of these analyses revealed, in most cases, that sample sizes previously used were

substantially smaller than the sample size in this study. In this study, efforts to examine the conceptual framework undergirding the RCI through factor analyses (SAS Institute, 1985) were conducted in an attempt to verify the conceptual bases previously established in prior research involving the RCI.

Factor analyses of the RCI in this study were also of particular interest since specific item revisions/additions were made to the original form of the RCI (Crisafulli, 1982; Hennigar, 1979). For each measure, a series of factor analyses were completed. Using principal components analysis, orthogonal and oblique rotation techniques (Promax, SAS Institute, 1985), unconstrained solutions were generated, followed by orthogonal and oblique rotation techniques interactively extracting appropriate factors, based upon an examination of factor eigenvalues. Examination of scree tests, factor loadings, eigenvalues, variances explained and conceptual fit of the items with each factor were also used in determining the best and most reasonable representation of the data for each measure.

In particular, comparisons of solutions obtained using principal components analyses, orthogonal and oblique rotation techniques were made. In instances where factor analyses suggested reconstruction of the original version of the RCI, conceptual fit of the data and consideration of reliability concerns contributed to subsequent decisions to retain a one-factor principal components solution, or a particular orthogonal or oblique solution. While oblique solutions do not assume complete independence among factors, they were considered as solutions that perhaps offered a more reasonable representation of data for the RCI when concern for the number of items retained on an instrument was a factor. In such instances, analyses of inter-factor correlations were also completed.

A set of decision rules was established and used for the RCI in interpreting the results of these factor analyses and determining solutions which best represented the data. An item was retained using the following decision rules as a guide: 1) only if its loading on a given factor was greater than or equal to .30; 2) only on the factor for which its loading was the greatest; 3) only if it loaded primarily on one factor; and 4) if, when loading on multiple factors, the difference between loadings was greater than or equal to .20.

Factor pattern matrices were examined for one-factor principal components and orthogonal solutions, while factor structure correlation coefficients were analyzed for oblique solutions. In these instances, factor loadings can be interpreted as Pearson product-moment correlations. That is, the higher an individual item loading, the stronger the statistical relationship between the item and the factor on which it was retained.

Based upon results of a variety of factor analyses, decisions were made to either retain the original operational definition of the construct, or to reconstruct the scale. In all factor analyses completed, teachers were used as the units of analysis.

Prior to the initiation of factor analyses for the RCI, all data were examined for missing or duplicate teacher responses. In instances where missing or erroneous data were noted, grand item means were substituted for teachers' responses to maximize the number of useable cases available for analysis.

Reliability Statistics

Cronbach Alpha reliability procedures (SPSS, Inc., 1988) were used to examine the internal consistency reliability of the factor-analyzed, reconstructed versions of the RCI. A total instrument score was used in these analyses for the original versions of the RCI. Reconstructed subscale scores were used for reliability analyses for the RCI. Calculations of reliability coefficients were completed using teachers as the units of analysis . Analyses were completed for all teachers (n=1921), as well as for teachers in schools that had at least 15 teacher respondents (n=59 schools).

Results

As previously mentioned, the RCI (Hennigar, 1979) was originally designed for use with middle managers in school administration (e.g., school principals) and later revised for use with classroom teachers (Crisafulli, 1982). Factor analyses completed corresponding to both applications supported the receptivity concept as a unidimensional construct (Crisafulli, 1982; Hennigar, 1979; J. W. Hennigar, personal communication, November 1, 1991). Results of a pilot study conducted in December, 1991, suggested minor revisions in the RCI to more accurately reflect current-day practices and terminology and to enhance clarity for use in this study. In addition to revising items contained in the RCI, several items were added and resulted in increasing the total number of RCI items from 50 to 56.

An exploratory factor analysis (SAS Institute, 1985) was conducted for the 56 revised RCI items to test hypotheses about the structure of the receptivity to change construct. Missing or erroneous data was noted for less than one percent (0.88%) of the sample.

Factor Analyses

Principal Components Analysis

Using principal components analysis and orthogonal and oblique rotation techniques (Promax, SAS Institute, 1985), an initial unconstrained factor solution yielded fourteen factors. Based upon final communality estimates, the 14-factor unconstrained solution accounted for 50.51% of the variance in the data. Subsequently, a series of factor analysis solutions using both orthogonal and oblique rotations (Promax) were completed iteratively extracting from one to fourteen factors (SAS Institute, 1985).

One-factor solution. As shown in Table 1, the one-factor principal components solution had 45 of the 56 RCI-items (80%) loading at or exceeding .33. Factor loadings ranged from .33 to .55., with 27 of the 56 items (48.21%) loading at or exceeding .40. The percentage of variance in the data explained by the one-factor solution was 15.75%.

Orthogonal Solution

Results of the two-factor orthogonal solution (Varimax, SAS Institute, 1985) (Table 2) revealed 40 of the 56 items loading on a single factor. In this solution, the first factor (22 items) accounted for 12.41% of the variance in the data, while the second factor (18 items) accounted for 9.71% of the variance. Based upon the final communality estimate, the total percentage of explained variance in the data resulting from the two-factor orthogonal solution was 22.13%.

Oblique Solution

In an attempt to obtain the best and most reasonable representation of the data, an analysis of the two-factor oblique solution (Promax, SAS Institute, 1985) was also

Table 1

Summary of Factor Pattern Coefficients (1 Factor Solution) for the Receptivity to Change Inventory (RCI) (n=1921)

RCI Item[a]	1 Factor[b]
1	.34
2	.33
3	.42
4	.38
5	.34
6	.48
7	.46
8	.43
9	.47
10	.48
11	.37
12	.40
13	.37
14	.33
15	.36
16	.45
17	
18	.33
19	
20	.36
21	.42
22	.34
23	.44
24	.42

(table continues)

Table 1 (continued)

RCI Item[a]	1 Factor[b]
25	.49
26	
27	.41
28	.50
29	.53
30	.55
31	.52
32	
33	.52
34	.40
35	.47
36	.40
37	.39
38	.40
39	.45
40	.38
41	.33
42	.55
43	
44	.41
45	.53
46	.44
47	.36
48	
49	.34
50	

(table continues)

Table 1 (continued)

RCI Item[a]	1 Factor[b]
51	
52	.30
53	
54	.44
55	
56	
Variance Explained	15.75%

[a] Total Variance explained (2-Factor) = 22.13%
[b] Principal components solution.
[c] Expressed as percentage of explained variance in the data by the solution.

completed. Also shown in Table 2, is the two-factor oblique solution. In this solution, 45 of the 56 items (80%) loaded on a single factor. Four items (#18, 19, 32, 43) did not load on either factor, and the remaining seven items loaded on both factors at or exceeding .32. For the 45 items loading on a single factor, factor loadings ranged from .34 to .64. The first factor consisted of 26 items, with factor loadings ranging from .34 to .64. The second factor consisted of 19 items, with factor loadings ranging from .37 to .60.

In the two-factor oblique solution, the first factor accounted for 13.82% of the variance in the data, while the second factor accounted for 11.05% of the variance in the data. Because the oblique solution does not assume complete independence among factors, the percentage of explained variance accounted for by each individual factor, while ignoring other factors in the solution, was higher in the oblique solution than in the orthogonal solution. However, based upon the final communality estimate, the total percentage of explained variance in the data resulting from the two-factor oblique solution was also 22.13%.

Supplemental Factor Analyses

Prior research using the RCI and factor analytic studies has reported the RCI as a unidimensional measure of receptivity to change. In light of prior and present findings, a second, separate factor analysis was completed for the 45 items loading on the one-factor solution. In particular, this subsequent series of analyses was conducted to examine whether or not a sub-construct was contained in the initial one-factor solution. Preliminary analyses were completed by submitting the data to a series of factor analytic solutions extracting from

Table 2

Summary of Rotated Factor Pattern (Orthogonal) and Factor Structure (Oblique) Coefficients for Two-Factor Solutions for the Receptivity to Change Inventory (RCI) (n = 1921)

RCI Item[a]	2-Factor Orthogonal		2-Factor Oblique	
	I	II	I	II
1			.34	
2	.40		.40	
3	.44		.46	
4		.41		.43
5			.34	
6	.46		.48	
7				
8			.41	
9		.46		
10		.46		
11	.50		.48	
12		.47		.49
13		.50		.51
14		.43		.44
15			.34	
16	.45		.47	
17		.37		.37
18				
19				
20	.47		.46	
21	.58		.56	

(table continues)

Table 2 (continued)

RCI Item[a]	2-Factor Orthogonal		2-Factor Oblique	
	I	II	I	II
22		.45		.46
23	.43		.45	
24	.42		.43	
25	.50		.52	
26	.36		.35	
27	.37		.40	
28				
29	.51		.54	
30	.63		.64	
31	.57		.58	
32				
33	.63		.62	
34	.48		.47	
35	.35		.49	
36				.38
37				.40
38				.40
39	.47		.50	
40	.47		.46	
41	.47		.46	
42				
43				
44	.47		.47	
45				
46				
47		.44		.45

(table continues)

Table 2 (continued)

RCI Item[a]	2-Factor Orthogonal		2-Factor Oblique	
	I	II	I	II
48		.56		.54
49		.42		.43
50		.62		.60
51		.38		.39
52		.41		.42
53		.51		.50
54		.44		.47
55		.52		.51
56		.56		.55
Variance Explained[b]	12.41%	9.71%	13.82%	11.08%
Total Variance Explained[b] (2-Factor) = 22.13%				

[a]All RCI items have been reverse scored.
[b]Expressed as the percentage of explained variance in the data for the solution.

one to four factors using both orthogonal and oblique rotation techniques (Promax, SAS Institute, 1985). Again, a two-factor oblique solution seemed to best represent the data. However, only 37 of the 45 items loaded on a single factor, seven items loaded on both factors and one item did not load on any factor. Content analysis of the items loading on each factor did not appear to clarify or refine conceptual explanations resulting from the initial factor analyses. Finally, a smaller percentage of total explained variance in the data was obtained with this secondary analysis, as compared to the initial analyses conducted. Thus, results of these subsequent factor analyses of the RCI did not enhance the initial conceptual explanation of teacher receptivity to change.

Final Solution Retained

As previously described, a variety of analyses were conducted. Based upon these results, the decision was made to retain the initial two-factor oblique solution which empirically verified the RCI as a two-dimensional measure of teacher receptivity to change.

Correlations between the two factors identified for the RCI were examined to determine the independence of these factors. A correlation of .31 was obtained for the two factors, verifying the relative independence of these factors. Thus, 45 items reflecting two separate subscales with factor structure correlations ranging from .34 to .64 were retained for the reconstructed version of the RCI.

Subscale Structure/Interpretation

Two subscales were constructed based upon the results of factor analyses and were used in subsequent analyses.

Receptivity to superficial/behavioral change. The first subscale represented as Factor I in the two-factor oblique solution shown in Table 2 may be described as representing receptivity to superficial/behavioral change. Items included in this subscale appear to target school or district level changes that relate primarily to organizational compliance and implementation of procedures associated with specified programs or services. Also, it seems that these types of superficial/behavioral changes might also preserve existing levels of teacher authority and autonomy. Based upon results of the two-factor analyses described above, 26 items were retained to operationally define this subscale.

Receptivity to cultural/normative change. The second subscale represented as Factor II in the two-factor oblique solution shown in Table 2 may be described as representing receptivity to cultural/normative change. Items included in this subscale target changes in deep-seated, traditional structures of "who we are" and "how we do things around here" (Corbett, et al., 1987) that routinely evolve and are reinforced through informal and unwritten rules and norms within a school or district organization. These types of cultural/normative changes typically require teachers to significantly alter traditional or normative ways of operation and/or adopt fundamentally different approaches. Based upon results of the two-factor analyses, 19 items were retained to operationally define this subscale.

A decision to retain the two-factor oblique solution allowed for retention of the largest possible number RCI items for these two revised subscales. Because these factor analyses disconfirmed the original unidimensional construct of receptivity to change and reliability was of concern, the two-factor oblique solution was considered the best and most reasonable

representation of the data for the initial use of RCI subscales. The two-factor orthogonal solution yielded 22 items that loaded on Factor I and 18 items that loaded on Factor II. This solution was quite similar in the number of items loading on each factor, but allowed for a slighter larger number of items that could be included in these initial versions of the factored RCI subscales (Table 2).

Descriptive Statistics

RCI - Total Instrument

Item descriptive statistics for each of the 56 items on the RCI were computed for the total sample of teachers in 94 schools. Descriptive statistics were also computed for the sample by school level (elementary, middle, secondary).

All RCI item responses were reverse-scored during data compilation for the purposes of statistical analyses and clarity. As a result, summary data reflected in this section reflect item scores that may range from a minimum score of 1.00 (extremely low receptivity/total rejection) to a maximum possible score of 5.00 (extremely high receptivity/total acceptance). Thus, higher scores reflect higher levels of positive receptivity to change among teachers.

Item means, standard deviations and x% maximum scores for teachers in all schools. The mean expressed as a percentage of maximum possible score for each item was computed by dividing the item mean score by the maximum possible item score. Thus, mean percentage of maximum possible scores (x% maximum) may be interpreted as indices of the degree of receptivity to change perceived by teachers in all schools or by school level (elementary, middle, secondary).

Item means for the RCI ranged from 1.48 (item 56: "Establish a procedure for evaluating teachers that is based on student achievement scores.") to 4.35 (item 26: "Require all incoming kindergarten children to have complete physical examinations."). Correspondingly, x% maximum scores ranged from 29.30% (item 56) to 87.00% (item 26). Thirty-eight items had mean teacher responses at or exceeding the midpoint of 2.5, with only 18 item mean scores below the midpoint. Standard deviations ranged from 0.89 (item 2: "Introduce a career education program in grades K-12.") to 1.55 (item 46: "Develop a 'Teacher of the Year' policy that awards annual merit pay to one teacher in each school.").

Descriptive statistics were also computed for the 56-item RCI by school level (elementary, middle, secondary). Item mean score ranges and standard deviation ranges were quite similar for all school levels, as compared to the total sample. Similarly the number of items with mean teacher responses at or exceeding the midpoint of 2.5 for each school level was comparable to the number reported for the total sample: elementary (38), middle (30) and secondary (37). Interestingly, item 56 ("Establish a procedure for evaluating teachers that is based on student achievement scores.") had the lowest mean response for all groups. Item 26 ("Require all incoming kindergarten children to have complete physical examinations.") had the highest mean score for elementary and middle school teachers, with item 21 ("Develop a positive action committee to curb school drop-outs.") reflecting the highest mean score for secondary teachers.

Reconstructed RCI

Based upon results of factor analyses completed in this study, the RCI was reconstructed to reflect two distinct subscales: Superficial/Behavioral Change (26 items) and

Cultural/Normative Change (19 items). Eleven items were not retained on either RCI subscale. Descriptive statistics for each RCI subscale were computed for all schools and by school level. Comparisons of x% maximum scores reveal that teachers reported higher levels of receptivity to superficial/behavioral changes than cultural/normative changes.

Reliability Analyses

Cronbach Alpha internal consistency reliability coefficients were computed for the total instrument and for each reconstructed subscale of the RCI. Teachers were used as the units of analysis. Alpha coefficients for the RCI for teachers were .81 (CNC subscale), .86 (SBC subscale) and .90 (RCI total instrument).

Alpha coefficients were also computed for each subscale/scale for teachers in all schools with at least 15 teacher respondents (n=59). For the RCI total instrument, all 59 schools had Alpha coefficients above .70. Twenty-five of the 59 schools had Alpha coefficients in the .90 - .99 range, while 29 schools had Alpha coefficients in the .80 - .89 range. For the SBC subscale, 45 schools had Alpha coefficients in the .80 - .89 range. Twenty-three schools had Alpha coefficients for the CNC subscale in the .80 - .89 range, with 14 schools in the .70-.79 range and 13 schools in the .60-.69 range.

Intercorrelations Among RCI Subscales/Scale

Pearson product-moment correlations between the receptivity to change subscales were computed for all schools using school (teacher) mean scores as the units of analysis (n=81). The correlation between the RCI subscales of Superficial/Behavioral Change (SBC) and Cultural/Normative Change (CNC) was rather moderate in magnitude and positive in direction (.53, $p < .0001$) for all schools. Similar correlations were noted between these

subscales by school levels: elementary (.37, $p < .01$), middle (.61, $p < .01$), and secondary (.79, $p < .0001$). The RCI subscales were positively and rather strongly associated with the RCI scale/total instrument in all schools, as well as by school level.

Discussion

The RCI has been described and confirmed in prior studies (Crisafulli, 1982; Hennigar, 1979) as a measure of a unidimensional construct of receptivity to change. Results of factor analyses in this study failed to confirm the RCI as a unidimensional measure, and suggested that teacher receptivity to change may be better conceptualized as a two-dimensional construct. The content of items loading on each factor reflected two distinct categories of change initiatives in schools termed superficial/behavioral change and cultural/normative change. A two-dimensional conception of teacher receptivity to change is compatible with the ideas that teachers will tolerate or adopt some types of changes (e.g., superficial/behavioral), but will strongly resist changes that are perceived to significantly alter or threaten established role conceptions, normative patterns, and values or beliefs (e.g., cultural/normative changes).

Factor analyses completed for the RCI in this study resulted in the following conclusions: 1) receptivity to change is more complex than a single, global or general construct; 2) receptivity to change as measured by the RCI is best understood as consisting of two sub-constructs: superficial/behavioral change and cultural/normative change; and 3) further refinement of the RCI (e.g., continued refinement of existing items and addition of other items) and use of factor analytic techniques with large samples will likely lead to the expansion of the operational definition of teacher receptivity to change. These conclusions

are discussed in detailed in two sections that follow: 1) conceptualizing and operationally defining teacher receptivity to change, and 2) implications for understanding planned organizational change in schools.

Conceptualizing and Operationally Defining Teacher Receptivity to Change

Planned organizational change can be characterized by diverse conceptions of related constructs, operational definitions and research designs. Clarity in the development of conceptual and operational definitions is fundamental to future research involving variables such as teacher receptivity to change. Results of this study provide empirical evidence for the need to re-examine and redefine the construct of teacher receptivity to change that appears important to the development of comprehensive, theoretical conceptions of planned organizational change in schools. This suggests a two-step process that includes efforts to develop conceptual accuracy in describing these constructs, and sound measurement giving attention to construct validation, reliability, and other psychometric concerns. As constructs related to teacher receptivity to change are re-examined, particular attention needs to be given to developing comprehensive and clearly stated descriptions of the essential elements of conceptual definitions. A second consideration is assurance that the conceptual definitions are timely and reflect current professional thinking. For example, the results in this study lead to a conclusion that the RCI, as a unidimensional measure of teacher receptivity to change, may no longer be a sufficient measure of the construct(s).

Although measures of teacher receptivity to change reveal that this construct has been previously considered as unidimensional, results of this study suggest at least a two-dimensional conception. More recently, the literature on planned change suggests a more

complex and multi-dimensional phenomenon than that reflected in current conceptualizations and measures of teacher receptivity to change. For example, results of studies of planned organizational change in school contexts (e.g., Chauvin & Ellett, 1990, 1991; Chauvin, Evans, & Ellett, 1992; Corbett, Firestone, & Dawson, 1987; Darling-Hammond, 1990; Elmore, 1987; Giacquinta, 1973, 1975a, 1975b; Hall & Hord, 1987; Punch & McAttee, 1979; Shujaa, 1990a, 1990b; Waugh & Punch, 1987) suggest that teacher receptivity to change is much more complex than a single, global, or unidimensional construct. Thus, measures that reflect a more complex view of teacher receptivity to change than just one dimension seem well-supported by the literature on educational reform that depicts change processes and teachers' involvement in change implementation as complex, multifaceted, and dependent upon unique contextual characteristics of the school and individual characteristics of members within the school organization (e.g., informal norms, organizational culture) (Corbett, et al., 1987; Darling-Hammond, 1990; Elmore, 1987; Hall & Hord, 1987).

Past accounts of teacher responses to change suggest additional, and perhaps more specific, aspects of receptivity to change beyond those suggested in this study. For example, cultural/normative changes may include a number of other dimensions or sub-constructs such as: 1) instructional and organizational change (Stern & Keislar, 1977); 2) elements of efficacy (e.g., performance or personal) (Fuller, et al., 1982); 3) status-risk variables (Giacquinta, 1973, 1975a, 1975b; Kaslow, 1974; Kaslow & Giacquinta, 1974; Raymond, 1979); 4) compatibility with profane and sacred norms (Corbett, et al., 1987); 5) congruence with authority structures (Elmore, 1987); and 6) congruence with teachers' prior knowledge and personal beliefs (Darling-Hammond, 1990). Thus, with continued

clarification and refinement of conceptual and operational definitions, more than two dimensions of teacher receptivity to change will likely be identified. As conceptual definitions are expanded, however, it will be important to clearly explicate essential elements of the constructs and to conceptually and operationally differentiate them from one another. This is critical to the development of sound measuring instruments.

Since all tests of validity and reliability contribute to construct validity (Messick, 1992), operational definitions developed to reflect particular constructs (e.g., teacher receptivity to change) also need to be examined in ways to assure sound psychometric quality. Therefore, a second step in this process of conceptualizing and operationally defining variables involves completion of appropriate validity and reliability studies for various measures. Such studies seem to call for multivariate analyses (e.g., factor analyses), criterion-related validity studies, and reliability studies using more complex and balanced designs (e.g., generalizability theory).

Implications for Understanding Planned Organizational Change in Schools

Results of this study appear supportive of the recent literature on planned change in schools. Conceptions of teacher receptivity to change as multifaceted, complex, and contextually-bound within the *process* of change may hold important implications for developing conceptual frameworks. Similarly the development of measures that reflect a more complex view of teacher receptivity to change than just one or two dimensions will enhance the sensitivity with which we may examine and seek to understanding relationships among teacher receptivity to change and other key variables (e.g., principal change facilitator

style, bureaucratic orientation, professional orientation, adoption levels of change, implementation of change/innovation).

Similarly, understanding teacher receptivity to change is important to understanding the broader conceptions of planned organizational change in schools for several reasons. First, educational reforms or planned change initiatives are typically focused on effecting changes in school or classrooms. Given the important roles of teachers in these settings, teachers may be the true gatekeepers to effecting long-lasting and systemic changes in the way schools and classrooms appear and function (Darling-Hammond, 1990). Second, teachers typically are recognized as having high levels of authority and discretionary power regarding what actually takes place in the everyday activities of schools and individual classrooms. Understanding how teachers perceive planned changes or reforms may be a substantial contribution to understanding the process of successful change in schools. Third, it has been recently suggested that substantial and worthwhile planned change in schools need to focus on changes in the systemic elements of schools. These types of change initiatives (e.g., school restructuring, teaching thinking skills, professional reflection and collaboration among teachers) reflect a more direct focus on enhancing students' learning than did earlier attempts to improve or reform schools (Cuban, 1988, 1990; Murphy, 1989). Since teachers are highly important and influential elements in the enhancement of student learning, understanding teacher receptivity to change and its relationship to other important variables (e.g., leader behavior and communication strategies) seem important as well.

In the midst of significant educational reform in American public schools, there is a critical need to understand teachers' perceptions and responses to cultural/normative changes

if reform initiatives are going to be successful (Cohen & Ball, 1990; Corbett, et al., 1987; Cuban, 1982, 1987, 1990; Darling-Hammond, 1990; Fullan, 1985, 1990; Hopkins, 1990). As revised in this study, the RCI appears to provide a more sensitive measure of the complexity of teachers' varying responses to change initiatives. These results also suggest that with continued efforts to refine the construct definition and measurement of teacher receptivity to change, more than two dimensions to this change construct may be identified.

These results are encouraging in terms of their contribution to the development of comprehensive, theoretical conceptions of planned organizational change in schools. For example, refinement of conceptual and operational definitions of the teacher receptivity to change construct will likely contribute to understanding variables such as principal change facilitator style and bureaucratic and professional orientations. From a practical perspective, a more complex measure of teacher receptivity to change that is shown to be valid and reliable would provide interested practitioners (e.g., principal, district superintendent, or external change agent/staff developer) with diagnostic applications that may prove useful for facilitating successful planned organizational change in a variety of school contexts.

In the midst of substantial change initiatives that are being faced by schools, these organizational contexts provide interested researchers, practitioners (e.g., change facilitators) with a *natural laboratory* for exploring and enhancing understandings of planned organizational change in schools. The development of conceptual definitions that reflect the complex nature of teacher receptivity to change and the continued refinement of operational definitions that offer greater sensitivity for measuring teachers responses to change seem to

hold promise for enhancing future efforts that focus on understanding *and* effecting long-lasting, normative change in schools and classrooms.

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